

### ABSTRACT

A bandgap reference circuit for generating a reference voltage includes a  
5 transistor, a bias current source for generating a bias current, a proportional to absolute  
temperature (PTAT) current source for generating a PTAT current, a first resistor, and a  
second resistor. The transistor generates a base-emitter voltage that is divided at an  
output node through the first and second resistors. The first resistor couples between the  
collector of the transistor and the output node. The second resistor couples between the  
10 output node and ground. The bias current source supplies the bias current to the  
transistor and the PTAT current source supplies a PTAT current to output node 105.  
The reference voltage may be obtained at output node as a result of combining a portion  
of the base-emitter voltage, which has a negative temperature coefficient, with a PTAT  
voltage that is obtained by sensing a portion of the PTAT current over the second resistor.

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